

NEW OR INSUFFICIENTLY-KNOWN CRANE-FLIES  
FROM THE NEARCTIC REGION (TIPULIDAE,  
DIPTERA). PART VII.<sup>1</sup>

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The preceding part under this title was published in 1940 (*Bull. Brooklyn Ent. Soc.* 35: 84-89). The novelties discussed herewith are from North Carolina and Tennessee, where a part of the material was taken by myself while engaged in a collecting survey of the southern Appalachians. Additional material was included in extensive lots of Tipulidae submitted for opinion by Dr. J. Speed Rogers, now in the Rogers Collection, Gainesville, Florida. Still further specimens were taken by my former student, Dr. Inez W. Williams, to whom I am greatly indebted for much material taken in the Great Smoky Mountains in eastern Tennessee and elsewhere in the vicinity of Knoxville. The detailed report on the Smoky Mountains Tipulidae will be published in a separate paper.

***Antocha (Antocha) decurvata* n. sp.**

General coloration buffy, the praescutum with three conspicuous brown stripes, the central stripe broader and darker in color; head light gray; legs brownish black, the femoral bases yellow; wings with a grayish tinge, the prearcular field milky white; veins brown; abdomen pale brown, the subterminal segments brownish black; male hypopygium with the outer dististyle produced into a long, pointed, blackened apex; aedeagus simple arising dorsally from a transverse sclerotized phallosomic plate, the distal half decurved; outer gonapophyses broadly obtuse at tips, inner pair slender, their apices more narrowly rounded.

*Male*.—Length about 7-7.5 mm.; wing 7-7.5 mm.

Rostrum and palpi black. Antennae short, black; flagellar segments oval, the ventral face of the more basal flagellar segments a little produced. Head light gray.

Pronotum darkened medially, paling to buffy on sides. Mesonotal praescutum buffy with three conspicuous stripes, the central one broader and darker than the laterals, vaguely divided medially by a still darker capillary vitta; posterior sclerites of notum pale, the scutal lobes weakly darkened. Pleura buffy, variegated with brownish gray on anepisternum and ventral pleurotergite. Halteres pale, knob weakly darkened.

<sup>1</sup> Contribution from the Entomological Laboratory, Massachusetts State College.

Legs with the coxae and trochanters yellow; remainder of legs brownish black, the femoral bases yellow. Wings with a grayish tinge, milky white in prearcular field; stigma only faintly or not at all darkened; veins brown, abruptly pale at base. Venation:  $R_2$  fainter than remaining veins;  $m-cu$  before fork of  $M$ .

Abdomen pale brown, the subterminal segments brownish black; hypopygium brown. Male hypopygium with the dististyles relatively short and stout, the outer style with the blackened apex long and pointed, including nearly one-half the total length of style. Aedeagus simple, arising dorsally from the base of a transverse sclerotized phallosomic plate, the distal half slightly decurved. Outer pair of gonapophyses broadly obtuse at tips, the inner or more posterior pair more slender but with the tips rounded or broadly subacute.

*Habitat*: Tennessee.

*Holotype*: ♂, Mascot, near Knoxville, March 12, 1938 (*Williams*). *Paratypes*, 1 ♂, Love Brook, near Knoxville, March 12, 1938 (*Williams*); 1 ♂, Lyon's View, near Knoxville, March 12, 1938 (*J. W. Jones*).

Among the described Nearctic species, the present fly is closest to *Antocha (Antocha) saxicola* Osten Sacken, the dististyles being much the same in both flies. The latter species has the inner dististyle more narrowed at apex, the aedeagus subtended on either side by a wide flange, and the conformation of the apices of both gonapophyses different. Both flies have a sclerotized phallosomic plate such as described above but in *decurvata* this is shorter transversely and with the ends reflexed.

### ***Antocha (Antocha) capitella* n. sp.**

This is the species earlier discussed by Rogers (*Occas. Pap. Mus. Zool. Univ. Michigan*, 215: 24-25; 1930) in his report on the Tipulidae of the Cumberland Plateau, Tennessee. The fly was left unnamed at that time pending further study of the difficult genus *Antocha*. The species is closest to *opalizans* Osten Sacken, having the same general type of male hypopygium, with both sets of gonapophyses developed into acutely pointed spinous points subtending the aedeagus.

Outer dististyle about as in *opalizans*, with the blackened apex of moderate length, longer than in *biarmata* Alexander but shorter than in either *obtusa* Alexander or *saxicola* Osten Sacken. Inner pair of gonapophyses strongly incurved at tips.

Aedeagus much shorter than either pair of gonapophyses, the apex appearing as a short cap. In reality, this apical cap is sclerotized, passing into hyaline membrane which is not or scarcely visible in microscopic slide mounts. In *opalizans*, the inner gonapophyses lie parallel to one another, their tips not or scarcely converging; entire outer end of aedeagus beyond the gonapophyses uniformly sclerotized, with no appearance of a capitate structure, as described.

*Habitat*: Tennessee.

*Holotype*: ♂, Allardt, Fentress County, July 1924 (*J. S. Rogers*); in Rogers Collection. *Allotopotype*, ♀. *Paratopotypes*, ♂♂♀♀, June 6–July 22, 1924. In my collection I have two slides representing paratype males, dated July 19 and 22, 1924; remainder of type-series in Rogers Collection.

**Dicranota (Eudicranota) yonahlossee** n. sp.

Allied to *catawbiensis*; general coloration yellow; legs yellow, the tips of the femora and tibiae narrowly and subequally blackened; wings pale yellow, the costal and stigmal regions slightly more saturated yellow; cells  $R_3$  and  $M_1$  petiolate; male hypopygium black, the median tergal lobe narrow, its subtending arms slender; dististyle terminating in a group of about a dozen black peglike spines.

*Male*.—Length about 6 mm.; wing 7 mm.

Rostrum and palpi yellow. Antennae short; scape and pedicel yellow; flagellum with basal segments brown, the outer segments passing into black. Head pale yellow.

Thorax uniformly yellow. Halteres pale, the knobs weakly darkened. Legs with the coxae and trochanters pale yellow; femora obscure yellow, the tips narrowly but conspicuously blackened; tibiae pale yellow, the tips conspicuously blackened, in amount about equal to the femoral tips; basitarsi obscure yellow to brownish yellow, the tips and remainder of tarsi brownish black. Wings with a pale yellow tinge, the costal and prearcular regions, with the stigma, a trifle more saturated yellow; veins brown, brighter at wing-base. Venation:  $R_s$  square and short-spurred at origin; cell  $R_3$  petiolate,  $R_{2+3+4}$  being subequal in length to  $r-m$ ; cell  $M_1$  with petiole longer than  $m$ .

Abdomen obscure yellow, narrowly darkened laterally, the ninth segment and genitalia black. Male hypopygium large, constructed as in the subgenus; most similar to that of *catawbiensis*, differing as follows: Median lobe of tergite much narrower, with shallow apical notch; lateral tergal arms longer

and more slender, the setiferous areas at base more extensive and paler. Interbase with the apical fascicle of bristles very broad and flattened. Basistyle with the outer lobe very broad and flattened, its armature of spines sparse. Dististyle narrow, split on its basal two-thirds, the apex with about a dozen short black peglike spines; at base of dististyle, on lateral portion, a group of from two to four blackened spinous setae.

*Habitat*: North Carolina.

*Holotype*: ♂, Linville Falls, Burke County, altitude 3200 feet, June 21, 1939 (*Alexander*). *Allotopotype*: ♀, June 3, 1940. *Paratopotype*: 30 ♂♂♀♀, with the allotype (*Alexander*).

*Dicranota (Eudicranota) yonahlossee* is most readily told from *D. (E.) catawbiensis* Alexander by the structure of the male hypopygium. The blackened tips of the femora and tibiae are somewhat narrower and more distinct in the present fly. The type locality, Linville Falls, is a deep granitic gorge with wonderful stands of the Canadian Hemlock, *Tsuga canadensis* (L.) Carr. This interesting locality is similarly the type-locality of the Yonahlossee Salamander, *Plethedon yonahlossee* Dunn.

#### *Limnophila globulifera* n. sp.

Allied to *niveitarsis*; general coloration black, sparsely pruinose; antennae of male elongate; posterior tarsi white; wings with a weak brown tinge, the prearcular and costal regions more yellowish;  $R_{2+3+4}$  a little longer than *m-cu*; male hypopygium with groups of modified setae on basistyle and inner dististyle; mesal face of basistyle densely covered with pale flask-shaped structures to present a tessellated appearance.

*Male*.—Length about 7 mm.; wing 7.5 mm.; antenna about 4.5 mm.

Rostrum and palpi black. Antennae black, elongate in male, being nearly equal to two-thirds the entire body; first flagellar segment cylindrical, succeeding segments subcylindrical, with the lower face a little bulging; verticils much shorter than the segments. Head with the anterior vertex and orbits light gray, the posterior vertex and occiput dark gray; anterior vertex broad.

Thorax dark gray, the surface of praescutum and scutal lobes only thinly dusted, subnitidous. Pleura dusted with gray. Halteres pale yellow. Legs with the coxae and trochanters yellow; femora yellow, the tips broadly black, including about the distal two-thirds of fore legs, much narrower on the middle and hind femora, especially the latter; tibiae brown,

the tips narrowly more blackened; fore and middle basitarsi brownish black, the tips and remainder of these tarsi black; posterior tarsi with basal three segments white, with snowy-white vestiture; terminal two segments black; proximal third of posterior basitarsi a little enlarged and with longer and more conspicuous white setae. Wings with a weak brown tinge, the prearcular and costal fields more yellow; stigma long-oval, brown; veins brown, more yellow in the brightened fields. Venation:  $Sc_1$  ending about opposite fork of  $R_s$ ,  $Sc_2$  a short distance from its tip;  $R_s$  angulated at origin;  $R_{2+3+4}$  of moderate length, about one-fifth longer than  $m-cu$ ;  $R_{2+3}$  arcuated along the lower edge of stigma;  $R_2$  very faintly indicated to sub-atrophied; cell  $R_3$  wide at margin; cell  $M_1$  subequal to or a little longer than its petiole;  $m-cu$  beyond midlength of cell 1st  $M_2$ , at from three-fifths to three-fourths the length of the cell.

Abdominal tergites black, sternites obscure yellow, the basal segments a little darker; outer segments, including hypopygium, more uniformly blackened. Male hypopygium with the basistyle near outer end provided with two separate groups of modified setae, the largest group with about ten setae, the second group lying a little more distad, with about five or six; in normal slide mounts, the major group lies closer to the mesal edge of the style than does the smaller one. Outer dististyle yellow, the bispinous apex blackened. Inner dististyle with a conspicuous group of about a dozen short black spinous setae on lateral edge; apex a little produced, at its base with two long modified setae. Gonapophyses with apical blade weakly expanded, the margin microscopically serrulate. Aedeagus with apex shallowly trifid. Mesal portion of basistyle adjoining the aedeagus pale, densely set with small flask-shaped structures to give a tessellated or reticulated appearance to this region; under higher magnification, each of these structures is seen to be shaped much like an ordinary electric light bulb. In *niveitarsis*, the inner dististyle has the spinous setae much less evident and poorly grouped. Basistyle with the groups of modified setae much reduced in their numbers, totalling only four or five. Gonapophyses with the blades broader and more flattened, at apex narrowed to an acute point. Aedeagus with the three apical prongs longer. Mesal portions of basistyle provided with microscopic setulae and groups of the same but entirely without flask-shaped structures such as occur in the new species.

*Habitat*: North Carolina.

*Holotype*: ♂, Linville Falls, Burke County, altitude 3200 feet, June 21, 1939 (*Alexander*). Taken with the species last described in a small accessory ravine immediately at foot of the main falls.

*Paratype*: 1 ♂, Mount Mitchell, Yancey County, altitude 6306 feet, June 8, 1940 (*Alexander*).

*Linnophila globulifera* is allied to *L. cherokeensis* Alexander and *L. niveitarsis* Osten Sacken, especially to the latter. It differs most conspicuously in the structure of the male hypopygium, as described.

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### BOOK NOTES.

**French-English Science Dictionary for Students in Agricultural, Biological, and Physical Sciences**, by Louis De Vries. McGraw-Hill Book Co., New York, N. Y. 1940. \$3.00.

Dr. De Vries now gives us the necessary companion to his German-English Science Dictionary. It has the same scope but appears to contain more non-technical words than the German. This fact probably enhances its usefulness by making it unnecessary to have at hand a general dictionary as well. This French-English Dictionary is conceived and carried out on the same plan as its predecessor. But we miss the names of many of the coadjutors in the previous one.

Dr. De Vries puts up a lightning-rod on the fly-leaf, in the form of this quotation; from Dr. Samuel Johnson: "Dictionaries are like watches; the worst is better than none, and the best cannot be expected to go quite true."

Of course, any specialist can go through the dictionary and note the missing terms in his field. The more abstruse and rare terms, or the neologisms of some obscure paper, will always be among the missing. We have some 100 or more that were omitted from our Glossary because no definition was available, and even specialists of standing in given fields knew them not. So, Dr. De Vries can hardly be held responsible if he failed to include some term or another.

Now, we wish there were an adequate Latin-English dictionary; and then, when the current turmoil dies down, we hopefully look forward to similar word-books for Italian, Portuguese, Bohemian, Hungarian, gradually working our way East to Chinese and Japanese.

The need and the usefulness of this dictionary cannot be overemphasized.

J. R. T.-B.